



Research Paper

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Influence of organic and inorganic nutrients on growth and yield attributes of tomato

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ABSTRACT : An experiment was carried at the experimental field of Division of Vegetable Science, SKUAST-Kashmir, Jammu and Kashmir during *Kharif* seasons of 2009 and 2010, to study the influence of organic and inorganic nutrients on growth and yield attributes of tomato (*Lycopersicon esculentum* Mill). In the light of experimental results it was concluded that, among different treatment combinations of inorganic and organic sources of plant nutrients treatment combination T₉ (3.5 t PM + 95 N: 75 P₂O₅ : 55 K₂O kg ha⁻¹) recorded significantly higher values of growth and yield attributing characters, besides improvement in soil characteristics.

KEY WORDS : Organic manure, Yield, Tomato, Growth

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Tomato (*Lycopersicon esculentum* Mill) belongs to family Solanaceae, is an annual vegetable crop grown throughout the world and ranks second in importance after potato. The tomato is believed to have been originated in central Africa and south America (Vavilov, 1951). In India it is an introduced crop and in being grown on an area of 571.700 hectare with annual production of 10260.6000 metric tonnes (Anonymous, 2008). In Jammu and Kashmir states, tomato is grown on an area of 1.700 ha with an annual production of 37000 metric tonnes (Anonymous, 2008). With the introduction of hybrids the demand for nutrients has significantly increased because of their tremendous yield potential as compared to traditional varieties thus, for harvesting higher yield in hybrids adequate nutrient supply is a pre-requisite, which can be met both from organic as well as inorganic sources. It has been observed that neither the chemical sources of nutrients nor the organic sources are able to sustain the soil productivity.

Present investigation was undertaken under Kashmir conditions, to assess the beneficial effects of organic and inorganic sources of plant nutrients both as sole applications as well as in conjugation on Shalimar tomato hybrid-1.

RESEARCH METHODS

The experiment was carried out in a Randomized Completely Block Design (RCBD) during *Kharif* 2009 and 2010 at Experimental Farm of Division of Vegetable Science, SKUAST-Kashmir, Jammu and Kashmir. The test crop was tomato (Shalimar tomato hybrid-1), the treatments were T₁ (RFD) (N = 190 kg ha⁻¹, P₂O₅ = 150 kg ha⁻¹, K₂O = 110 kg ha⁻¹), T₂ (FYM = 38 t ha⁻¹), T₃ (SM = 32 t ha⁻¹), T₄ (PM = 7 t ha⁻¹), T₅ (VC = 14 t ha⁻¹), T₆ (biofertilizers @ 2.5 kg ha⁻¹), T₇ (FYM 50 % + RFD 50 %), T₈ (SM 50 % + RFD 50 %), T₉ (PM 50 % + RFD 50 %), T₁₀ (VC 50 % + RFD 50%), T₁₁ (biofertilizer @ 2.5 kg soil inoculation + RFD 50%) and T₁₂ (control). The growth and yield parameters were estimated in field conditions and according to the results, the different treatments showed variation in growth and yield parameters. Five plants were selected randomly from each unit plot. The data obtained were statistically analysed and LSD were calculated.

RESEARCH FINDINGS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarised under